CODE! or do we have signed authorization. Jason Lowe

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Re: Permit numbers PRT-828950 and 1157.

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Re: SYP 96-002

Assessment of PALCO SYP/HCP and EIS/EIR with respect to the Humboldt marten.

Comments by Jason Lowe

I am currently a graduate student in the Biological Sciences Department, Humboldt State University. I received a Bachelors Degree in Environmental Biology from Humboldt State in 1995. My work experience includes a two year position at U.S. Fish and Wildlife Service (FWS) in Arcata, CA where I worked with other agencies on the Northwest Forest Plan. Specifically I conducted landscape analyses on over 2 million acres of land in northern California where my primary task was the analysis of sensitive species requirements. During my term with FWS, I attended a week-long training seminar on Habitat Conservation Planning. From 1996-1998 I initiated and was the facilitator of the Coastal Marten Working Group, a group of scientists and agency personnel working on issues related to the Humboldt marten . I am familiar with the literature and current research regarding the Humboldt marten. I have also conducted field surveys for martens in northern California and in the Sierra Nevada.

General

The Humboldt marten is listed as a Species of Special Concern by the California Department of Fish and Game and as a Species of Concern by the U.S. Fish and Wildlife Service. This species is not listed as Threatened or Endangered, so guidance governing its coverage in HCPs is found in Chapter 4 of the HCP Handbook. The criterion used in this chapter for identifying the standard for addressing unlisted species is as follows:

> "Under the "No Surprises" policy an unlisted species is said to be "adequately covered" by an HCP and subject to the assurances of "No Surprises" when the species is addressed in the HCP "as if it was listed pursuant to section 4 of the ESA, and in which HCP measures for that species would satisfy permit issuance criteria under section 10(a)(1)(B) of the ESA if the species was listed." (USDC & USDI 1996)

I will provide an assessment of the HCP with respect to Humboldt marten at a level of criticism equal to that expected if the species was listed as Threatened or Endangered under the ESA. This heightened level of treatment is not only required by the HCP Handbook, but is also justified ecologically because the marten was once thought to be extinct in the Coast Ranges of California then later rediscovered, and is now one of the region's most imperiled species. After providing a brief background on the status of Humboldt marten conservation, I will present comments on the HCP according to three of the mandatory elements of HCPs: 1) Identifying Project Impacts, 2) Mitigation, and 3) Monitoring.

Conservation Status of the Humboldt Marten

The Humboldt marten was common in the late nineteenth and early twentieth century. Grinnell et al. (1937) related accounts of individual trappers in the early part of the century taking 35 and 50 in one winter within a few miles of the coast. As late as 1940 a few marten were trapped in the areas immediately surrounding Honeydew and Kneeland in Humboldt County (Twining, unpubl. ms.) and Smith River in Del Norte County (Zielinski and Golightly 1996). Declining harvests led to a closure of the season in northwest California in 1946. Observations of marten in the range of the Humboldt sub-species have become increasingly uncommon since the trapping season ended. From 1991-1996 a survey consisting of a total in excess of 20,000 survey days using track plates and camera systems was conducted in the range of the Humboldt marten, but no martens were detected (Golightly and Zielinski 1996). Additional surveys since 1996, however, did produce martens at several locations on National Forest land (Kent pers. comm.). These detections demonstrate that some populations persist and that the Humboldt marten is not yet extinct. However the sub-species remains very rare, and its future viability is uncertain.

Identifying Project Impacts

The first step of identifying project impacts is to collect and synthesize biological data on the species (USDC & USDI 1996). This was done extensively for listed species, especially the marbled murrelet. However in the brief one and a half page treatment for the Humboldt marten this was barely initiated. As recited above from the HCP Handbook, an unlisted species such as the marten shall be addressed as if it were listed in order to be included in the permit. This level of treatment would surely describe the biology of the species in more detail than that described on page 39 of volume IV of the HCP, where they state:

> "Essential habitat elements of *Martes americana* include trees, rock piles or talus slopes, or snags for resting, foraging and breeding, and the presence of food; including Douglas tree squirrels, voles, and also various species of berries."

and

> "*Martes americana* is a species predicted to occur in late successional habitat by the

CWHR model, likely because of their need for large trees or snags with cavities and other structure."

These two sentences are all the HCP offers as a collection and synthesis of biological data. This is not adequate to serve as the foundation of a conservation plan, and does not meet the regulatory standard of addressing the species at a level of treatment equal to that of a listed species. Important data concerning habitat elements is lacking. For example, home range size is not given, no distinction is made between foraging, resting, and denning habitat, and how much of each is needed to support martens. Such information would include reports of snags/acre, logs/acre, canopy cover, tree diameter, understory vegetation, patch size, road density, etc. These are the habitat requirements one needs to consider when creating a conservation plan and identifying project impacts.

It is realized that much of the above habitat information is not known for the Humboldt marten sub-species. Given this fact we are faced with two options: 1) acknowledge the data gaps, and determine that there is not enough known about the sub-species to include it in the HCP, or 2) use data from other, closely related, sub-species of marten. Either of these options would be appropriate, but including the Humboldt marten in the HCP without important habitat data would not be appropriate.

Once the collection and synthesis of biological data has been completed, the HCP Handbook calls for the determination of proposed activities and their anticipated take levels. The proposed activities are not listed in the Humboldt marten section, but can be found in other areas of the HCP. They include management in MMCAs to maintain and recruit murrelet habitat, and nearly unmitigated timber harvest outside of the MMCAs (vol. IV pg. 33-34). The anticipated take level of Humboldt martens, however, is not given. This is a key piece of information that is normally duplicated on to the Incidental Take Permit (ITP), and is used in the Section 7 process when conducting the Jeopardy analysis. It is realized that specific numbers of martens to be taken is impossible to determine especially since its distribution is not known. However, take can be quantified in other ways such as all the martens within a specific geographic area, or the number of martens expected to occupy x-number of acres of suitable marten habitat will be taken. In order for the marten to be included in the HCP as a covered species the plan must quantify the anticipated take level, but it does not.

Mitigation Programs & Standards

There are no specific mitigation standards or amounts outlined in Section 10 of the ESA or in the HCP Handbook. Mitigations are proposed by the permittee, reviewed by the agencies, and a mutually agreeable strategy is negotiated. This makes reviewing the plan for adequacy problematic. However some general guidelines are set forth in the HCP Handbook which can be used. First and foremost the Handbook states, "Mitigation programs should be based on sound biological rationale". The lack of pertinent biological information presented in the HCP regarding marten (addressed above) stifles the development of any mitigations. If no information is presented on types and abundance of specific habitat components, then how can the authors of the HCP know what actions are important to mitigate for, how to mitigate for them, or how much mitigations to provide? JL-1

In the Humboldt marten section of the HCP, mitigation measures are listed in general terms only. They include 1.) the Headwaters Reserve, 2.) MMCAs, and 3.) maintenance of late-seral habitat including snags and large trees.

The Headwaters Reserve will likely provide some benefit to marten viability, however it alone cannot adequately conserve marten due to its relatively small size. The concept of connectivity is at issue here. The Headwaters Reserve totals about 7500 acres of protected land, of which about 2500 acres are probably high quality marten habitat (this figure is not given in the HCP, but should be). For comparison, the average home range size for marten in high quality habitat is about 1400 acres (Freel 1992). This means the Headwaters Reserve would provide protection for only 2-3 marten home ranges. Without any further mitigations these home ranges would be isolated from the rest of their population.

Marbled Murrelet Conservation Areas (MMCAs) are also proposed to serve as mitigation for the marten. The stated goals of the MMCAs are to maintain and recruit murrelet nesting habitat. Although both the murrelets and martens use late-seral forests, specific habitat elements differ between the species. Much scientific rational and management guidance is given for the murrelet mitigations in the MMCAs, but no consideration is given to the management of marten habitat. Given this lack of consideration, MMCAs may not provide good marten habitat and should be redesigned if they are to serve as mitigation for marten. Activities allowed in MMCAs may in fact degrade marten habitat. For example some fuel removal and salvage will be allowed in MMCAs (vol IV, p. 34). These activities remove essential snags and logs from the stand. Although the murrelets may tolerate these activities to a degree, martens cannot. Martens use stands with exceedingly high snag and log densities. So, a plan for murrelets is not necessarily good for martens.

JL-1 CONT.

Habitat elements that should be considered in mitigation measures include canopy cover, down logs, road density, patch size, and spatial arrangement of mitigation areas. None of these important habitat variables are included in the mitigations proposed.

Snag and Log Retention

The following are snag and down log requirement for marten from Freel 1991. Requirements given for high, medium, and low habitat types.

	High	Medium	Low
Live Tree Snags (>24"dbh)	>9/ac.	6-9/ac.	3-6/ac.
Down Logs(>15"x15')	>20/ac.	10-19/ac.	5-9/ac.

The proposed mitigation for snags and logs found in the EIS include mostly evaluation and assessment over the course of 5-10 years. The only definite mitigations proposed for forest habitats include the retention of extremely low densities of snags. Only 1.2 snags/acre over 30"dbh are proposed for retention (3.10-106 EIS). This contrasts sharply with the above levels of snags cited by Freel. The proposed mitigation does not even meet the lowest levels of snag density for low quality habitat. The requirements for low quality habitat should be considered a minimum goal for areas of managed land between reserves. This would facilitate movement and dispersal, a necessity for any

JL-2

conservation plan. Within reserves medium and high quality habitat should be provided.

Down log mitigation is almost non existent on 3.10-106 of the EIS. Only logs 20 feet from Class I&II streams are proposed for retention. As shown by the data above martens use down logs in exceedingly high densities. Without the retention of at least 5-9 15"x15' logs/acre in managed land and more in reserves, martens will not have access to one of their important habitat elements. This would surely have a high level of adverse impact on marten viability in the planning area. JL-2 CONT.

Spatial Analysis

The Humboldt marten seems to have undergone a range reduction in the last century. The southern portion of its range has been most affected by the reduction in habitat. This is supported by the detection of marten in the northern portions, and the absence of detections in the southern portions. The planning area for this HCP is situated roughly in the central portion of the former range. Additionally, the planning area is located between federal and state reserves of late-successional habitat. These reserves include the Kings Range, and Humboldt Redwoods State Parks to the southwest, and Forest Service lands to the east. These federal and state reserves are potentially large enough to support martens, but they are separated by great distances. If this HCP is implemented as proposed, without carefully designing mitigation measures specific to martens, then it is likely that the planning area will not support marten. If this is the case, the planning area will pose a significant barrier to connectivity between large federal and state reserves. Then reserves, in turn, will be more susceptible to the effects of isolation and the observed range reduction will continue to creep northward. This poses a significant threat to the viability of the species as a whole. JL-3

Monitoring Measures

Monitoring is proposed to include vegetation inventories and the "habitat element retention and recruitment strategy". It is not clear what will be accomplished with this strategy because it is not described in the marten section. One can only assume that it is described somewhere in the volumes of pages and appendices. This strategy should focus on important marten habitat requirements, but nowhere are those even listed. Because the Humboldt marten's range in unknown within the HCP area, monitoring should focus on surveys to document the marten's occurrence. In order to effectively manage for a species you must first know where it occurs. These surveys should occur in the Headwaters Reserve, the MMCAs, and in the remaining lands of suitable habitat. JL-4

Key Deficiencies

* In order to be covered by the HCP the marten must be treated as if it were a listed species, but only about two pages of the plan address the marten. JL-5
* The first and most basic task of developing an HCP is to collect and synthesize biological information, but only two brief phrases are given as the biological foundation. A much more detailed account is necessary. JL-6
* Anticipated levels of take are needed for the ITP and Section 7 consultation, but they are not given for the marten. JL-7
* The HCP Handbook emphasizes the importance of "sound biological rational" to serve as the foundation of mitigation, but there is a complete lack of scientific information given in the HCP regarding martens. So, mitigation proposals are speculative. JL-8

* The Headwaters Reserve mitigation is relatively small providing habitat for only 2-3 marten home ranges, and will be susceptible to isolation. | JL-9
* The MMCAs are designed mainly for murrelets (a sea bird), so will not be effective for mesocarnivores such as marten unless they are redesigned accordingly. | JL-10
* The MMCAs will be managed using some fuel reduction and salvage activities that will degrade habitat quality for marten. | JL-11
* Other mitigations are vague, and include maintenance of limited snags and large trees. Mitigations should also include canopy cover, down logs, road density, patch size, and spatial arrangement. | JL-12
* The proposed mitigation does not even meet the lowest levels of snag density for low quality habitat. | JL-13
* There are no mitigations proposed for the retention of down logs in forested habitats. Given marten use of logs in high densities, this would have a significant adverse affect on viability. | JL-14
* Loss of marten viability in the HCP area will isolate federal and state reserves in the central portion of the marten's range facilitating a range reduction. | JL-15
* The monitoring plan does not specify what marten habitat elements will be measured, and is vague in how the strategy is to be implemented. | JL-16
* The monitoring plan should include surveys to document the occurrence of marten in the Headwaters Reserve, MMCAs, and remaining lands of suitable habitat. | JL-17

Literature Cited

Freel, Maeton. 1991. A literature review for management of the marten and fisher on national forests in California. U.S. Department of Agriculture Forest Service Pacific Southwest Region.

Zielinski, W.J. and R.T. Golightly. 1996. The status of marten in the redwoods: is the Humboldt marten extinct? *in* The Proceedings of the Conference on Coast Redwood Forest Ecology and Management. John LeBlanc, editor. p115-119.